

DESCRIPTIONS OF NEW HYMENOPTERA.

RY T. D. A. COCKERELL.

(With Notes by W. J. Fox.)

Photopsis picus sp. nov. ♂ 7-10 mm. long, anterior wing 6-7 mm.—Dark honey color; antennæ fulvous. Legs variable, entirely pale ochreous, or dirty straw color, or the four hindmost femora largely blackened. Wings smoky hyaline, with a large fuscous cloud beyond the marginal cell; nervures partly brown and partly colorless, stigma dark brown; sculpture ordinary; pleura and dorsum of prothorax closely and deeply punctured; mesothorax strongly, but not so closely punctured; metathorax reticulate. Abdomen with first segment finely reticulate, second with numerous broadened shallow punctures; the remaining segments smooth and shiny, becoming punctured below on their distal margins; first joint of flagellum a little longer than second. Head round seen from in front, with the eyes large and black; metathorax rapidly descending, but rounded. Abdomen elongate; the first segment with its anterior half very narrow, suddenly widening just before its middle to the bulbous posterior portion, which is rapidly narrowed at its junction with the second segment; genitalia projecting in the form of a single short spine, which is slightly curved upwards. Very slightly more than half of the stigma enclosed in marginal cell; marginal cell a little shorter than stigma, abruptly truncate before and behind; two submarginals only; the first long and narrow, longer than stigma; the second beneath the first, moderately small, triangular, its inferior distal angle a little more than a right angle; the single recurrent nervure entering second submarginal before its middle.

Hab.—Santa Fé, New Mexico (Ckll. 1665, July 25, 1894, and Ckll., 1775, beginning of August, 1894); Las Cruces, New Mexico (E. O. Wooton, September, 1894); San Augustine, New Mexico (Ckll. 2081, Aug. 28, 1894, and three others taken by Prof. Townsend at same place and time); all taken at light. The San Augustine specimens show the whole range of the variation in the color of the legs.

The species allied to *P. picus* are in a considerable state of confusion, and it becomes necessary to enter into some detail in order to make the exact position of the new form clear.

The supposed *mellipes* which ("Ent. News," 1894, p. 200) I compared with *P. territus*, had been so named for me by Mr. Fox, but it turned out that this was a mistake. Thereupon, after comparison with the coll. Am. Ent. Soc. it was labeled *albipes*; but when I wrote Mr. Fox that I could not separate this so-called *albipes* from *nubecula*, he examined the collection and discovered that the

types of *albipes* were missing, and that the specimens (from Colorado) standing in their place were in fact *nubecula*. The original types of *albipes* were from Nevada.

In the meanwhile Mr. Fox kindly sent a specimen of what he considered true *mellipes*, from Arizona. This proved to be the same as what I had labeled *belfragei*, an example having been taken by Prof. Townsend at San Augustine, New Mexico, and another by Miss J. Casad in the Mesilla Valley. Mr. Fox, being informed of this, wrote that *mellipes* Blake, and *belfragei* Blake, were really the same species; *belfragei*, having more than ten years priority, is the correct name.

But we have, from San Augustine (Prof. Townsend) and the Mesilla Valley (Prof. Wootton), also another form, which flies with *belfragei*, and very exactly resembles it, except that it has a black head. This, evidently, is *P. melaniceps* Blake, but I judge it to be only a variety of *belfragei*, which Mr. Fox admits is perhaps the case.

At Santa Fé I caught a *Photopsis* and sent it to Mr. Fox; word came back that it was *P. nokomis*, though small. I regret that I did not study it, as I find among my Santa Fé *Photopsis* no *nokomis*, but only *picus*. However, that *picus* is distinct from *nokomis* cannot be doubted.

Mr. Fox writes: "the color of *nokomis* varies; but the species is easily distinguished from those mentioned above [*nubecula*, etc.] by the shape of first abdominal segment, which is shorter and gradually broadened from the base; in the others it is suddenly dilated at about the middle and is much longer. The width of this segment at apex is variable in *nokomis*."

P. picus, on the other hand, has the first segment shaped like that of *nubecula*. If *picus* is held sideways, the abdomen, with the first segment, suggest the body and head of a woodpecker, whence the specific name. So also in *nubecula*, but the segment in *picus* averages slenderer.

The other type is illustrated by *P. clara* Bl., a Texas specimen, of which I have from Mr. Fox. In this the abdomen, with first segment, might be compared to the body and head of a vulture, in the posture with the head depressed upon the shoulders.

Mr. Fox points out the little brushes of hair on the apices of ventral segments 4 and 5 in *nubecula*. These are entirely wanting in *picus*, which can also be distinguished from *nubecula* by its venation.

A question remains as to *albipes*. Mr. Fox suggests that it may perhaps be the same as *nubecula*, though Cresson does not mention the abdominal brushes; or it may, he adds, be the new form *picus*.

It seems to me that in all probability *albipes* is a good species, and I am sure it cannot be *picus*.

The *picus-nubecula-belfragei* group is recognized by the large fuscous cloud, varying in intensity beyond the marginal cell. But *albipes* is said to have the marginal cell itself with a fuscous cloud, and nothing is said of any beyond. To further distinguish *albipes* from *picus* are the three submarginal cells, *picus* having never more than two.

The following table will serve to separate the species allied to *picus*, which are found in the Mesilla Valley:

- A.—Stigma inconspicuous, very pale yellowish; two submarginal cells and two recurrent nervures.
1. Head concolorous with body.....*P. belfragei* Blake.
 2. Head black.....*P. belfragei* var. *melaniceps* (Blake).
- B.—Stigma brown, conspicuous.
1. Three submarginal cells and two recurrent nervures. .*P. nubecula* Cress.
 2. Two submarginal cells and only one recurrent nervure....*P. picus* Ckll.

A word may be added to the generic name employed, Mr. Fox having proposed to merge *Photopsis* in *Sphærophthalma*. To me, genera are mainly a matter of convenience; and as *Sphærophthalma* is already inconveniently large, it seems suitable to distinguish from it such a series as *Photopsis*, which is easily recognized by its peculiar *facies*, and, moreover, differs from *Sphærophthalma* in being (like *Brachycistis*) strictly nocturnal. It may be that some supposed species of *Sphærophthalma* are really females of *Photopsis*. Thus I found a single specimen at Las Cruces, New Mexico, which Mr. Fox tells me is *Sphærophthalma marpesia* Bl., though small. To me it appears to be the female of *Photopsis concolor*, which is common in the same vicinity. But, as Mr. Fox observes, there is no way of proving this at present, and *S. marpesia* must be held distinct.

Brachycistis perpunctatus n. sp. ♂.—Nearly 6 mm. long, perfectly black, except the dark brown antennæ and tarsi, the ferruginous mandibles, and the lateral margins of the dorsal abdominal segments shining ferruginous in certain lights; the tegulæ are shining black; the large stigma is black, the veins dark brown, the wings quite clear. Antennæ long, first and second joints of flagellum practically equal, the second perhaps a little the longer. Head, thorax and abdomen shining, with sparse whitish hairs, most perceptible on the abdomen; the whole body surface is rather sparsely, but very strongly punctate, the punctures on the mesothorax being very large; the first abdominal segment is large,

high, with its suture with the second constricted; viewed from the side the shape of the first segment may be compared to that of the head of a young chicken; the stigma is, if anything, a little nearer to the base than to the apex of the wing; the marginal cell is excessively narrow and short, and does not reach the costal margin; there are only two submarginals, the first long, the second small and triangular, but still larger than the marginal; it receives the recurrent nervure much before its middle; the intermediate tibiae are spinose at tip, but there is only one spur, properly speaking; the abdomen is terminated by a single ferruginous spine, curving upwards; the eyes are not precisely round, but suboval.

Hab.—"Found drowned" in the college horse-trough, Las Cruces, New Mexico, 1895, one specimen. This is clearly a *Brachyeistis*, though there is no trace of a third submarginal cell. It is by this character and the black teguke, that it will be known from *B. atratus* (Blake), which it evidently much resembles.

This year, at Las Cruces, *B. elegantulus* has been taken in May, and *B. glabrellus* in April and June.

Oxybelus sparideus n. sp.—Male about 5.5 mm. long, strongly and densely punctured; black with yellow markings; silvery pubescence on cheeks and face; prothorax carinate; scutellum with an obscure longitudinal keel; squama large, rounded, subovate, not pointed as in *emarginatus*, but having a small and easily-overlooked lateral spine; spine broad, deeply emarginate, the emargination forming a little less than a right angle; pleurae with minute, appressed, silvery hairs; first segment of abdomen deeply longitudinally sulcate; apex of abdomen roundly emarginate. Antennae dark brown, paler beneath; mandibles yellow with black tips; superior border of prothorax very pale yellow; teguke and spine rufous; squamae and an oblique spot anterior to each, yellow; abdominal bands yellow, more or less interrupted in the middle; last segment rufous; femora black, anterior and middle femora with silvery pubescence and their distal ends yellow; tibiae yellow, posterior tibiae anteriorly black; tarsi yellow. Wings hyaline, veins piceous.

Hab.—Las Cruces, New Mexico (Ckll. 1966, Aug. 24, 1894).

The specific name is derived from the resemblance which the spine and squamae present to the tail with hindmost fins of a fish of the genus *Diplodus*, family Sparidae.

One has to consider the possibility of this being a variety of the ♀ of *O. emarginatus*. I have a ♂ of *emarginatus*, kindly identified by Mr. Fox, which I took in Las Cruces (Ckll. 2436), and it differs in its entirely black prothorax, in the absence of the spots before the squamae, in the shape of the squamae and the spine, etc. It would appear from Robertson's description (Tr. Am. Ent. Soc. xvi, 84) that the spots before the squamae are usual in ♀ *emarginatus*. Robertson says, also, sides of prothorax yellow.

[NOTE.—*O. sparideus* is evidently distinct from *O. emarginatus*—the spine is differently shaped and the body more coarsely punctured.—W. J. F.]

Oxybelus subcornutus n. sp.—Female about 8 mm. long, strongly punctured, but not so closely on abdomen as in *sparidens*. Black, with yellowish white markings; silvery pubescence on face and pleuræ; vertex with a small tubercle, looking something like a fourth ocellus; prothorax carinate; scutellum not carinate, or very feebly and almost invisibly so; squamæ joined in the middle line, each ending apically in a strong curved tooth; spine small, rather broader at end than at base, abruptly truncate; median sulcus of first abdominal segment almost entirely obsolete, or at least very shallow; tip of abdomen truncate, very feebly subemarginate. Antennæ black, slightly brownish towards tips; posterior lateral tubercles of prothorax whitish; tegulæ testaceous; squama and spine whitish. Abdomen with the bands yellowish white, interrupted in the middle; femora black, posterior borders of anterior and middle ones mostly white; tibiæ mostly black on one side, the other side of anterior tibiæ rufous, of middle and posterior, white; anterior tarsi rufous; posterior and middle white, the terminal joints darkened. Wings hyaline, veins piceous.

Hab.—Las Cruces, New Mex., Aug. 11, 1894 (C. H. T. Townsend).

This seems very near to *O. cornutus* Rob., and might be a form of the ♀ of that species (Robertson only describes the ♂). In *subcornutus* the ocelli are normally placed, and the spine is truncate, not rounded. The mandibles of *subcornutus* are rufous in middle as in *cornutus*.

Mr. Fox recognized *cornutus* in a Las Cruces specimen formerly sent him, and this circumstance favors the idea of *subcornutus* being a form of the same.

[NOTE.—*O. subcornutus* differs from the ♀ of *cornutus* by the sparser punctuation of dorsulum and abdomen, particularly that of the second ventral segment: in *cornutus* it is covered with coarse, rather close punctures, while in *subcornutus* it is very sparsely punctured. The form of the abdominal markings is different also.—W. J. F.]

Aphilanthops taurulus sp. nov. ♂. Length about 11 mm.; of anterior wing about 8 mm.—Black, with the markings bright lemon-yellow. Head broad and thick; seen from in front broader than high; eyes elongate-oval, parallel, entire, olive-green, further apart from each other than the greatest length of either; ocelli about as far from eyes as the third and fourth joints of antennæ, hind ocelli a little nearer to each other than the length of the third antennal joint. Head pitch-black, strongly punctured on vertex, but with a smooth, shining spot, about as big as an ocellus, some distance behind the ocelli; cheeks and face covered with appressed, shining, silvery hairs; overlapping the base of the mandibles, on each side, it a triangular tuft of reddish hairs, and immediately above this tuft is an obliquely oval, pale yellow spot, rather obscured by the silvery hairs; mandibles reddish at tips, and with a small yellowish white spot externally at the base. Antennæ about as long as the head is high, black, with the end of the scape broadly pale yellow; fourth joint about half as long as third. Thorax black, with the collar, tubercles, tegulæ, transverse band on scutellum and small mark on each side, and transverse band on post-scutellum, lemon-yellow; metathorax truncate; prothorax in front shining, sparsely punctured; mesothorax

strongly and thickly punctured; scutellum and post-scutellum mostly smooth; metathorax rough; plenræ and sides of metathorax with silvery hairs. Thorax not so broad as head, and not very much greater in bulk. Abdomen hardly as long as head and thorax, shining, but well punctured, suture between first and second segments fairly constricted; color black, with broad lemon-yellow bands on segments 1-5, that on 1 broadly interrupted in the middle, that on 2 narrowly interrupted, the others continuous, those on 3 and 4 somewhat narrowed in the middle; venter with three interrupted bands. Coxæ black, with their tips more or less yellow; femora black, with their distal tips yellow; tibiæ yellow in front and rufous behind on fore legs, middle tibiæ yellow without and lemon within, hind tibiæ yellow without and black within, but wholly yellow at their proximal, and wholly black at their distal ends; tarsi of anterior legs rufous, the others piceous. Wings smoky hyaline, nervures piceous, stigma brown; third submarginal rapidly narrowing to marginal, a deep sinus between them; marginal about as long as first submarginal, narrowly obliquely truncate, with a small stump of a nervure at its tip; first submarginal somewhat longer than second and third combined; second small, nearly half narrowed the marginal, receiving the first recurrent nervure a little beyond its middle; third receiving the second recurrent nervure much before its middle.

Hab.—Las Cruces, New Mexico, June 8, 1894 (Ckll., 872).

The broad head and high-set antennæ have somewhat the aspect of a bull's or buffalo's head, whence the specific name.

The United States species of *Aphilanthops* may be separated thus:

A.—Face with three broad, yellow stripes.....*frigidus* Smith.

B.—Face without stripes.

1. Legs red; clypeus margined with yellow.....*quadrinotatus* Ashm.

2. Legs black and yellow.

a. Clypeus yellow.....*laticinctus* Cresson.

b. Clypeus black.....*taurus* Ckll.

Cameron has described two species, *A. marginipennis* and *A. punctifrons* Cam., from Mexico, but they both appear to me to belong to *Eucerceris*; the first mentioned being allied to *E. canaliculatus* Say, though evidently distinct.

Nysson solani n. sp. ♀.—Length about 6 mm., of anterior wing $4\frac{1}{2}$ mm. Head and thorax black; legs and abdomen except tip, rufous. Head seen from above about twice as broad as long, about as broad as thorax; seen from in front transversely oval. Black, strongly rugose punctate, sparsely clothed with appressed white hairs, which, becoming denser, form a conspicuous silvery band on the face bordering each eye, extending to the insertion of the antennæ; clypeus black, with white hairs; mandibles rufous, with blackish tips. Antennæ very dark brown, first joint of flagellum longer than second. Thorax black, very strongly rugoso-punctate; anterior portion of prothorax, tegule and metathorax rufous, but the last very dark; mesothorax with a faintly indicated median groove; metathorax with a sharp spine on each side. Legs rufous, tarsi darker; fourth joint of hind tarsus conspicuously the shortest; spurs at apex of hind tibia black, unequal, the one on the inner side being the longer; hind tibia with

five short, stout spines on its outer edge, of these one is apical, and the interval between the apical and the one before it is conspicuously greater than that between any other two. *Wings* smoky, iridescent; marginal cell subtruncate, more dusky than the rest of the wing; two submarginals only, the normal *second* submarginal being wanting instead of the third; second submarginal distinctly truncate, forming by its junction with the marginal a short-stemmed ∇ , the arms of which are about equal. *Abdomen* punctate, each segment, except the last, with a silvery band along its inferior margin above and below; first two segments rufous, next three rufous with dorsum blackish, last mostly black.

Hab.—Las Cruces, New Mexico, July 13, 1893, on *Solanum elaeagnifolium*.

Mr. Fox, who first recognized this species as new, observes that it is near *O. bellus* Cr., but differs in its finer punctuation of abdomen, and by lacking the yellowish markings on thorax and abdomen. It may be added that its peculiar venation distinguishes it at once from any known North American species.

[NOTE.—It is doubtful in my mind whether the absence of the second submarginal cell is more than an anomalous character. *Nysson bicolor*, of which also but a single specimen is known, possesses but two submarginals, but in that species it is the third, not the second, cell that is wanting. A larger series is necessary to demonstrate the constancy and value of these supposed, at least at the present time, characters. *N. solani* is remarkable for its very strongly serrated hind tibiae, a character existing in *N. texanus* and *fuscipes*, and which is not present in the species more closely allied to *solani*.—W. J. F.]

Prosopis subtilis Fox in litt. n. sp.—♀ about 6 mm. long, black, with yellow marks on face, prothorax and legs. Head not very broad; thorax nearly twice as long as high, metathorax subtruncate, but with rounded outlines. Head and thorax rather dull, abdomen shiny; punctuation of vertex and dorsulum fine, close and uniform, giving a somewhat granular appearance under a lens of low power; metathorax more rugulose, but not conspicuously so, its middle portion very finely transversely striate; punctuation of abdomen minute, shallow and inconspicuous; sides of face, to a short distance above the insertion of the antennae, primrose yellow; this yellow commences narrowly at lower margin of eye, and following the edge of the clypeus gradually widens, reaching its greatest width a short distance below the antennae, after which it more rapidly narrows again to the eye-margin, just touching the outer edge of the sockets of the antennae; at its upper termination it does not actually reach the eye-margin, being separated therefrom by a very narrow and short descending tongue of black; the rest of the face is black, except the lower margin of clypeus, which is broadly rufous, with centrally an obscure yellowish spot, whence proceeds upward a suffused rufous tongue; the rufous of the clypeus therefore resembling, in outline, a trefoil leaf, or perhaps rather an inverted \mathbf{T} ; ends of mandibles shining rufous; flagellum more or less testaceous below, blackish above; hind margin of prothorax narrowly yellow, the yellow interrupted in the middle; tubercles yellow; tegulae with a yellow spot on anterior, and a subrufous spot on posterior half. Femora black with the extreme tips reddish yellow; anterior tibiae yellowish in front, black behind; middle tibiae with the base rather broadly, and the apex

narrowly reddish yellow; posterior tibiae with more than the basal (proximal) third pale yellow; tarsi yellowish, with a reddish tinge, darkened toward the tips. Wings hyaline, with a slightly dusky tinge; second submarginal very little narrowed toward marginal, rather more than half as long as first submarginal.


Hab.—Las Cruces, New Mexico, on *Solidago*, by the acequia, close to Schaublin's mill, Aug. 24, 1894 (Ckll., 1997), also two other specimens taken on the same day (Ckll., 1971, 1956). The locality of *subtilis* is about two and three-fourths miles from that of *P. bipes*.

Mr. Fox observes that *subtilis* "is evidently new, differing in its subtle sculpture, color of antennae, and spot at apex of clypeus."

This species and *bipes* were sent to Mr. Fox with a query as to their identity with *P. limbifrons*, but he informs me that they are not that species, and points out that they are certainly also distinct from one another.

Although they present considerable superficial resemblance, careful examination reveals numerous points of difference which cannot be attributed to variation. The following table will assist in their separation:

<i>P. bipes.</i>	<i>P. subtilis.</i>
Size larger, form stouter.	Smaller, more slender.
Punctuation of vertex and mesothorax strong and deep.	Punctuation shallow, and not nearly so noticeable.
Metathorax more rugose.	Metathorax less rugose.
Yellow marks on face resembling human feet.	Marks on face broadly triangular, not resembling feet.
Clypeus entirely black.	Clypeus partly rufous.

Perdita numerata n. sp. ♀.—Length about 5.5 mm.; head and thorax brassy green, abdomen banded pale yellow and black. Head broader than long, inner orbits parallel, clypeus and lower part of sides of face with sparse punctures, vertex finely rugulose; pubescence of head, as also thorax, scattered white; mandibles pale yellowish, rufous at tips; labrum prominent, black; clypeus shaped something like a cocked hat, shiny, dull white, with very conspicuous black marks on its disc, *i. e.*, a pair of broad vertical bars, a little converging above, and not reaching the margin above or below, and a spot without each bar, below the level of its middle, thus ; small quadrangular patch between upper edge of clypeus and the antennae, and a more or less triangular patch on each side between clypeus and lower front edge of orbit dull pinkish; the latter pinkish patch extends along orbit about as far as the level of the insertion of the antennae, but along clypeus only about as far as the black spot; ridge between antennae distinct. Antennae above blackish, below yellow, the last joint more or less truncate; collar, tubercles, and a band on upper edge of prothorax broadly interrupted in the middle yellowish white; mesothorax shining, rugulose, very sparsely punctured, median groove distinct; scutellum rather more closely punctured; metathorax bluish-green or bluish, contrasting with the brassy green mesothorax, scutellum and post-scutellum; upper part of metathorax shiny,

appearing microscopically tessellated. Femora black, with pale yellow distal ends; anterior and middle tibiae pale yellow with a black patch behind; hind tibiae much longer, with long hairs, and almost all black; anterior and middle tarsi pale yellow, hind tarsi black; tegulae very pale yellow. Wings fairly ample, hyaline, nervures and stigma piceous, almost black, nervures all very distinct; stigma not at all pale in the middle; marginal cell short, not longer than stigma; second submarginal greatly narrowed above, practically triangular. Abdomen with the first dorsal segment black, with a small, transverse, yellow band, broken centrally and not reaching the sides on the disc; second, third, fourth and fifth segments with their their distal half (or more) black, and the proximal half pale yellow, the bands not united in the middle line, nor conspicuously indented; venter dirty yellow, with a pair of dark oval spots on each segment.

Hab.—Las Cruces, New Mex., May 2, 1895, on *Salix* (Ckll., 2898).

The shape of the second submarginal cell is like that of *P. arcuata* Fox, but *P. numerata* is totally distinct by its face markings from any other species that I know of. The number 11 on the clypeus will at once distinguish it.

DESCRIPTIONS OF NEW HYMENOPTERA.

BY T. D. A. COCKERELL AND J. E. CASAD.

(With Notes by Wm. J. Fox.)

Sphærophthalma wickhami n. sp. ♀.—About 10 mm. long. Head large, a little broader than thorax, quadrate seen from above, subcircular seen from in front; color orange-brown; face and crown strongly punctured, covered with appressed shiny orange-red hairs, with blackish, erect hairs interspersed, the latter longest above the eyes; clypeus with long, pale yellowish hairs; mandibles shiny rufous with black tips. Antennae brown, blackish towards tips, first joint of flagellum a little longer than second. Thorax orange-brown, punctate, becoming strongly reticulate on metathorax; strongly constricted at sides; margin above the smooth and shiny lateral excavations dentate; pubescence similar to that of head, but not so dense on pro- and mesothorax, but anterior part of prothorax and greater part of metathorax bare; coxæ and femora orange-red, tips of femora blackish; tibiae and tarsi blackish, more or less covered with pale yellowish shiny hairs; tarsal spines rufous, tibial spurs whitish, minutely ciliate. Abdomen pyriform, first segment broad and sessile, orange-red basally and nearly destitute of hairs, but distal half dorsally covered by dense, appressed, shiny, pale golden hairs; second segment black, finely punctate, with a slight median golden streak on its anterior third; a large squarish, pale golden spot on each side, and a rather broad, median, pale golden fringe on the posterior margin; the last-mentioned fringe occupies about the middle third of the margin of the dorsal portion of the segment, the remaining part of the margin being black, except a small golden patch on the extreme lateral portion; the large pale spots are further from each other than the diameter of either; remaining segments black, heavily fringed with pale golden hairs, except the last, which has the hairs orange-red; ventral surface of abdomen with pale hairs; that of second segment strongly punctate and rufous.

Hab.—Houston, Texas (H. F. Wickham); one specimen.

This species is allied to *S. quadriguttata* Say, which it resembles.